310D

JOHN DEERE

The backhoe of choice when only the best will do

John Deere backhoes have come a long way. But they've always been trendsetters. From day one, when the first backhoes were introduced, they have had planetary final drives. An important feature all the competitors have yet to adopt. And they have always had 2-lever controls. A feature every other manufacturer has been forced to adapt. The evolution of the John Deere backhoe has been deliberate. Always driven by input from the people who buy and use them. And that's how it will always be. The 310D you see here is the result of thousands of hours of candid conversations with customers just like you. The result is, quite frankly, the most dependable, productive, most user-friendly backhoe on the market. Simply stated...it's the best backhoe in the 14-foot class. After reading the pages that follow, we think you'll agree.

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When backhoe production is the game, put the 310D on your team

From the minute you swing the seat to the rear, you'll know the 310D is a machine designed for big backhoe production.

Set the stabilizers. These controls are now conveniently located to your left and both can be activated with one hand.

As you grab the backhoe controls notice that the valve body is mounted low to give you a clear view into the trench.

The 310D's low-effort controls let you work at peak effiency for long hours and still give you the feel and control to make precise maneuvers with confidence.

The 310D delivers the fast cycle times and high production that will bring a smile to the face of your customers, your accountant and your banker. And you can bet it will have just the opposite effect on your competitors.

It's not just in digging jobs that the 310D shines. Its 10 ft. (3.1 m) stabilizer stance with 13 degree rearward angle lets you tackle tough craning jobs.

And the stabilizer cylinders have a lockout feature to prevent drifting in either direction.

For situations where extra digging depth or reach is needed, consider an extendable dipperstick. You get a full 4 feet (1.2 m) of additional capacity. Plus, John Deere's design moves less weight out as it is extended. This enhances the machine's ability to handle heavy loads.

This extendable dipperstick uses boron steel wear strips on both the inner and outer boxes. Having all sliding contact between these replaceable surfaces eliminates wear on the structural components.

Bucket linkage exclusive. The backhoe bucket linkage used on the John Deere 310D lets you set it up two ways.

For maximum power, and peak production in adverse conditions, use the "power dig" position. You have 160 degrees of bucket rotation.

The "truck loading" position provides 180 degrees for better material retention.

Another exclusive feature... you can use Case and Ford buckets as well as buckets from older John Deere backhoes.

John Deere backhoe buckets have thick, wide, full-length side cutters, a 1 in. (25 mm) cutting edge for maximum strength and rigidity and Fanggs™ bucket teeth for more aggressive digging.

They are also wider at the front opening than at the back. This reduces bucket drag and provides better dumping characteristics.

When your team needs a backhoe that will deliver "clean up hitter" performance call up the John Deere 310D.

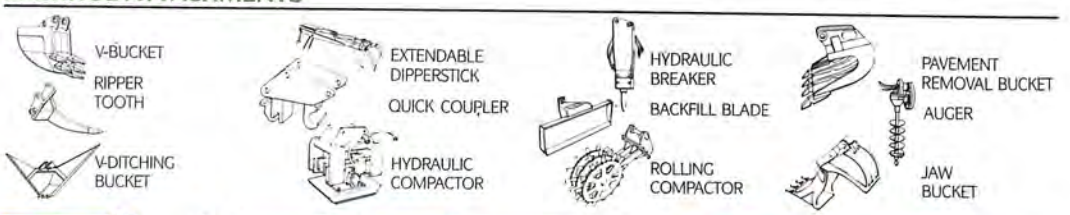
BACKHOE PERFORMANCE

	Digging force, bucket cylinder power dig	Digging force, crowd cylinder	Bucket positions	Lifting capacity, maximum, boom at 65 deg.
Standard Dipperstick	11,570 lb. (51.5 kN)	6650 lb. (29.6 kN)	12 or 21 deg. rollback	4600 lb. (2087 kg)
Extendable Dipperstick				
Retracted	11,530 lb. (51.3 kN)	6700 lb. (29.8 kN)	8 or 17 deg. rollback	4400 lb. (1996 kg)
Extended	11,530 lb. (51.3 kN)	4550 lb. (20.2 kN)	13 or 21 deg. rollback	2700 lb. (1225 kg)

BACKHOE BUCKETS

		Standard-duty							Heavy-duty						Extra Heavy-Duty		
Width	**In.**	12	16	18	24	30	36	36	12	18	24	24	30	36	18	24	30
	(mm)	(305)	(406)	(457)	(610)	(762)	(914)	(914)	(305)	(457)	(610)	(610)	(762)	(914)	(457)	(610)	(762)
Capacity	**Cu. Ft.**	2.5	3.6	5.1	7.5	10.0	10.0	14.5	2.5	5.1	7.5	8.8	10.0	10.0	5.1	7.5	10.0
	(m^3)	(0.07)	(0.10)	(0.14)	(0.21)	(0.28)	(0.28)	(0.41)	(0.07)	(0.14)	(0.21)	(0.25)	(0.28)	(0.28)	(0.14)	(0.21)	(0.28)
Weight	**Lb.**	244	268	322	370	410	430	556	258	334	396	476	444	480	362	424	474
	(kg)	(111)	(122)	(146)	(168)	(186)	(195)	(252)	(117)	(151)	(180)	(216)	(201)	(217)	(164)	(192)	(215)

BACKHOE ATTACHMENTS



Very accessible lever activates the backhoe boom lock.

Fanggs bucket teeth give better bucket fill, penetrate with less resistance.

Reversible stabilizer pads have a cleated side for use in soft surfaces.

Extendable dipperstick uses heat-treated wear strips to prolong life.

Two-lever controls are standard, 3-lever controls are available.

Reversible pads easily flip to rubber street side when needed.

Superior swing torque speeds backfilling.

The narrow boom (10 inches [254 mm]) allows a clear view to the bucket.

Quick coupler lets you change buckets or tools in seconds.

Multipurpose bucket can be field or factory installed.

Vertical backhoe improves over-the-road stability.

Excellent balance and fully synchronized transmission mean superior loader performance

With the backhoe stored in a vertical position for transport and a fully synchronized transmission, the 310D is one smooth handling, quick moving unit.

Visibility is superior. The operator is perched high. And the 310D's loader is designed for optimum visibility, as the top two photos below confirm.

Easy loading. The single-lever control operates with a minimum of effort. There's a float position, automatic-return-to-dig, hydraulic self-leveling and bucket level indicator.

Bucket choices. Loader buckets feature heat treated cutting edges, built-in chain hooks and wide skid shoes.

Mechanical-front-wheel drive turns your 310D into a more productive loader in any application. Just flip a switch on the console to activate the control. A green light shows it has been successfully engaged.

The rugged, industrial axle, with a unique offset differential, provides excellent ground clearance. You should also know that there's no maneuverability penalty when you choose front-wheel drive as the steering specifications below clearly confirm.

Automatic, electric parking brake. When you turn the ignition key to off, the parking brake engages automatically. There is a switch on the control console that lets you disengage the brake when you restart and lets you control the brake whenever the engine is running.

Hydrostatic power steering lets you effortlessly maneuver full loads, even in soft footing, with the machine sitting still.

For big loader performance, there's only one choice – the 310D Backhoe Loader from John Deere.

Boom arms taper out to the bucket for superior visibility.

The single bucket cylinder is center mounted for excellent visibility.

Electric reverser control lets you change direction effortlessly.

Front-wheel drive engages on-the-go, features a limited slip differential.

A single lever controls loader functions. Button disengages clutch.

Foot-operated differential lock can be engaged on-the-go.

Buckets are predrilled for bolt-on cutting edges or teeth.

LOADER PERFORMANCE

Breakout force	9350 lb. (41.6 kN)
Lifting capacity, full height	5700 lb. (2585 kg)
Raising time to full height	4.0 sec.
Bucket dump time	1.1 sec.
Bucket lowering time (power down)	2.3 sec.

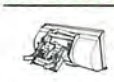
LOADER BUCKETS

	Width		Capacity		Weight	
Loader:	In.	(mm)	Cu. Ft.	(m^3)	Lb.	(kg)
General purpose	92	(2340)	1.0	(0.76)	760	(345)
	92	(2340)	1.3	(1.00)	800	(363)
Long Lip	89	(2270)	1.25	(0.96)	750	(340)
Multipurpose	92	(2340)	1.25	(0.96)	1560	(708)

STEERING

Non-powered axle	
Curb turning radius with brakes	11 ft. 9 in. (3.57 m)
without brakes	13 ft. 3 in. (4.04 m)
Bucket clearance circle with brakes	31 ft. 6 in. (9.61 m)
without brakes	34 ft. 7 in. (10.55 m)
Steering wheel turns, stop to stop	2.2 to 2.9
Mechanical-front-wheel drive	
Curb turning radius with brakes	10 ft. 11 in. (3.34 m)
without brakes	13 ft. 8 in. (4.17 m)
Bucket clearance circle with brakes	29 ft. 9 in. (9.07 m)
without brakes	35 ft. 3 in. (10.74 m)
Steering wheel turns, stop to stop	2.5
Axle oscillation stop to stop, both axles	22 degrees

LOADER ATTACHMENTS


QUICK COUPLER

CLAW

AUGER

ANGLE DOZER

MULTI-PURPOSE BUCKET

SNOW PLOW

SIDE DUMP BUCKET

FORKS

JIB BOOM

POST DRIVER

CEMENT MIXER

BROOM

Quite frankly, the best operator's station in the industry

There's a self-cleaning step at just the right height, conveniently placed handholds, a large platform. Then you walk into the 310D...from either side. Easy entrance and exit is just the beginning of the things you'll like about this operator's station.

There's lots of room. Controls and gauges are well placed. The comfortable seat with optional flip-up armrest is fully adjustable. It can be ordered in vinyl or fabric covering. A suspension base is also available. And a seat belt retractor keeps this important safety feature within easy reach.

Order your 310D with cab and you will marvel at the attention to detail that went into its design. Huge doors open on either side. With glass from top to bottom, they allow a clear view to the front.

Rear glass, the bottom half sliding down in a low storage position, and the top half storing overhead, opens to provide an unobstructed view to the rear.

Best ventilation. Fifty-five percent of the total glass area can be opened while the machine is operating. Not only does the entire back of the cab open, but side windows open to the front or rear. And the 310D can be operated with the left front door open without fear of damage because it opens to the front and is secured within the width of the vehicle by a gas cylinder.

Cab equipped 310D's come with a 40,000 Btu/hr. (11.7 kW) heater/pressurizer. It features fresh air intake and distributes heat through automotive type ducting and vents strategically located throughout the cab.

An air conditioner is also available as an option and can be factory or field installed.

Whisper quiet. Whether your 310D is equipped with a ROPS canopy or a cab, you will be amazed at the quietness. A thick, padded rubber floormat, headliner and underhood muffler with vertical exhaust make the 310D a pleasure to operate and to have on the jobsite.

Control console to the operator's side contains gauges, controls and electric monitor. Monitor provides audible and visible warnings.

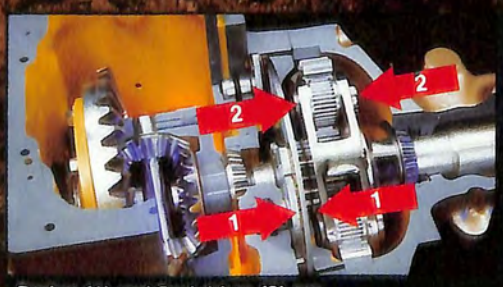
Big feet. Long legs. No problem. There's plenty of space when swinging from one operating position to the other.

Suspended pedals are centered. Brakes (center) can be locked together or operated individually. Differential lock is on the left, accelerator on the right.

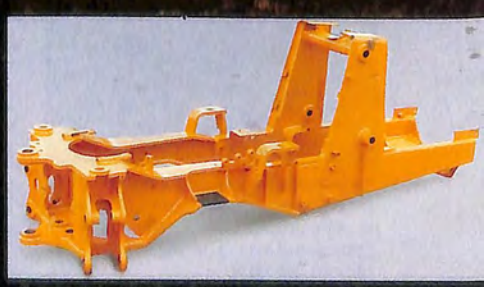
The huge right door opens within the machine width or wider. Well-placed controls assure unhampered access to the operator's station.

Wipers clear a wide swath front and rear. Windshield washer is optional.

The left door opens within the machine's width. It can be left open while operating without fear of damage from passing traffic, tree limbs.



Brakes (1) and final drives (2) are mounted inboard.



A massive, single-piece, unitized mainframe carries the 310D's components.

Here's a drivetrain that's engineered for low maintenance and high dependability

From front to rear, the drivetrain in the 310D is made to last, delivering dependable, trouble-free performance year after year.

A John Deere diesel engine provides the power. This field proven, fuel efficient 239 cu. in. (3.9 L) power plant is engineered to stand up to demanding construction applications year in and year out.

It uses replaceable wet-type cylinder liners that are centrifugally cast to assure uniform wall thickness. The benefit...fast, even heat dissipation to prevent cylinder distortion, premature ring wear and oil contamination, all of which can lead to costly engine failures.

To add further to their durability, all John Deere engines feature high strength alloy heads with valve rotators and replaceable seats; heavy-duty crankshafts that are statically and dynamically balanced for smooth operation, cast aluminum pistons that are light in weight to reduce connecting rod bearing loads and provide good heat transfer.

Transmission shift knob has a clutch disconnect button for convenience.

The parking brake control is an electric switch that is mounted on the control console.

Piston bottoms receive a constant spray of cooled, filtered oil to maintain lower and consistent piston temperatures for controlling critical clearance. This also reduces ring belt and pin bushing deposits and provides lubrication and cooling for the piston pin.

The high-torque-rise characteristics of John Deere diesel engines give them tremendous lugging ability. This lets operators perform at peak proficiency without time consuming downshifts.

A proven torque converter and reverser is tied to a responsive, fully synchronized John Deere 4-speed collar-shift transmission.

ENGINE

Engine – John Deere 4039D and 4039T

Rated power @ 2200 rpm	naturally aspirated.....67 SAE net hp (50 kW)
	turbocharged.....72 SAE net hp (53.7 kW)
Cylinders	4
Displacement	239 cu. in. (3.917 L)
Fuel consumption, typical	1 to 2 gal/hr (3.8 to 7.6 L/h)
Torque rise at 1200 rpm with turbocharger	25 percent
without turbocharger	20 percent
Transmission	John Deere 4-speed fully syncronized, collar shift
Torque converter	11 in. (280 mm) with 2.83:1 stall ratio

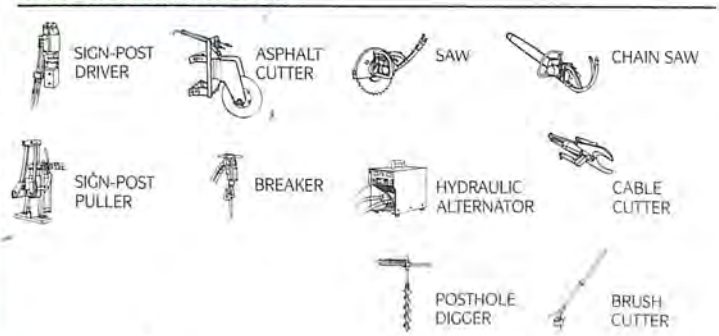
TRAVEL SPEEDS

	Gear	Forward mph	Forward (km/h)	Reverse mph	Reverse (km/h)
With 19.5L-24	1	3.4	5.5	3.1	5.0
rear tires	2	5.9	9.5	5.3	8.5
	3	12.6	20.3	11.3	18.2
	4	20.8	33.5	18.8	30.3

TIRES

Front	Rear
11L-15, 8 PR, F3	16.9-24, 8 PR, R4
11L-16, 12 PR, F3	16.9-24, 8 PR, R4
11L-15, 8 PR, F3	17.5L-24, 10 PR, R4
11L-16, 12 PR, F3	19.5L-24, 8 PR, R4
With mechanical-front-wheel drive	
12-16.5, 8 PR	19.5L-24, 8 PR, R4
14-17.5, 8 PR, NHS	21L-24, 10 PR, R4

OTHER ATTACHMENTS



Brakes are the trouble-free hydraulic wet disk type. They are mounted inboard, sealed in a pressurized oil bath, away from dirt and contaminants. They're self-adjusting, self-equalizing and require no maintenance.

The parking/emergency brake on the 310D is a separate system, independent of the service brakes. It uses a mechanical V-groove band located on the differential ring gear. The brake can be applied and released by activating a switch on the control console. Whenever the engine is shut off the brake is automatically engaged, immediately. The added margin of safety this system provides is obvious.

A mechanical differential lock is standard on the 310D. It can be engaged on the go, equalizing power to both wheels.

Inboard planetary final drives distribute rear axle loads evenly over three gears, rather than one. The axle is housed in a massive casting and is carried on heavy-duty, lubricated bearings to prolong life. Planetary gears are sealed in an oil bath for cooling and lubrication.

All drivetrain components are mounted in the one-piece unitized mainframe where they are isolated from working stress and shock loads. And each can be removed independently of the others to speed repairs and reduce downtime.

You have better ways to spend your time than servicing your backhoe...

John Deere engineers made a determined and successful effort to make the 310D a machine that is fast and easy to service.

Daily checks can be safely made with the loader bucket on the ground. A large door at the front of the hood provides access to the engine oil dipstick, oil fill, radiator and air filter.

Lubrication points are easily accessible to assure that this important task is accomplished regularly. Remote, centralized grease banks are used where access is difficult.

Periodic service...that work you need to do every 50, 100 or 250 hours, can be time consuming. But John Deere makes it quick...and easy.

Reverser and hydraulic level checks are made through a door near the top of the loader mast. Here you check the level of the windshield washer fluid, too.

Changing hydraulic filters is another good example.

While some owners are struggling with filters hidden in the reservoir or with clumsy canister filters, the John Deere owner merely spins off the old and spins on the new.

It is the same quick and easy story with fuel filters, air filters and other periodic maintenance chores.

And while others work to adjust mechanical brake linkage, service air systems and lube brake actuator pivots, the John Deere owner has peace of mind knowing the brakes on his backhoe require no service at all.

Other periodic service is equally quick and simple.

Hood, side shields and grill housing are designed for easy removal to expose the engine for major service work.

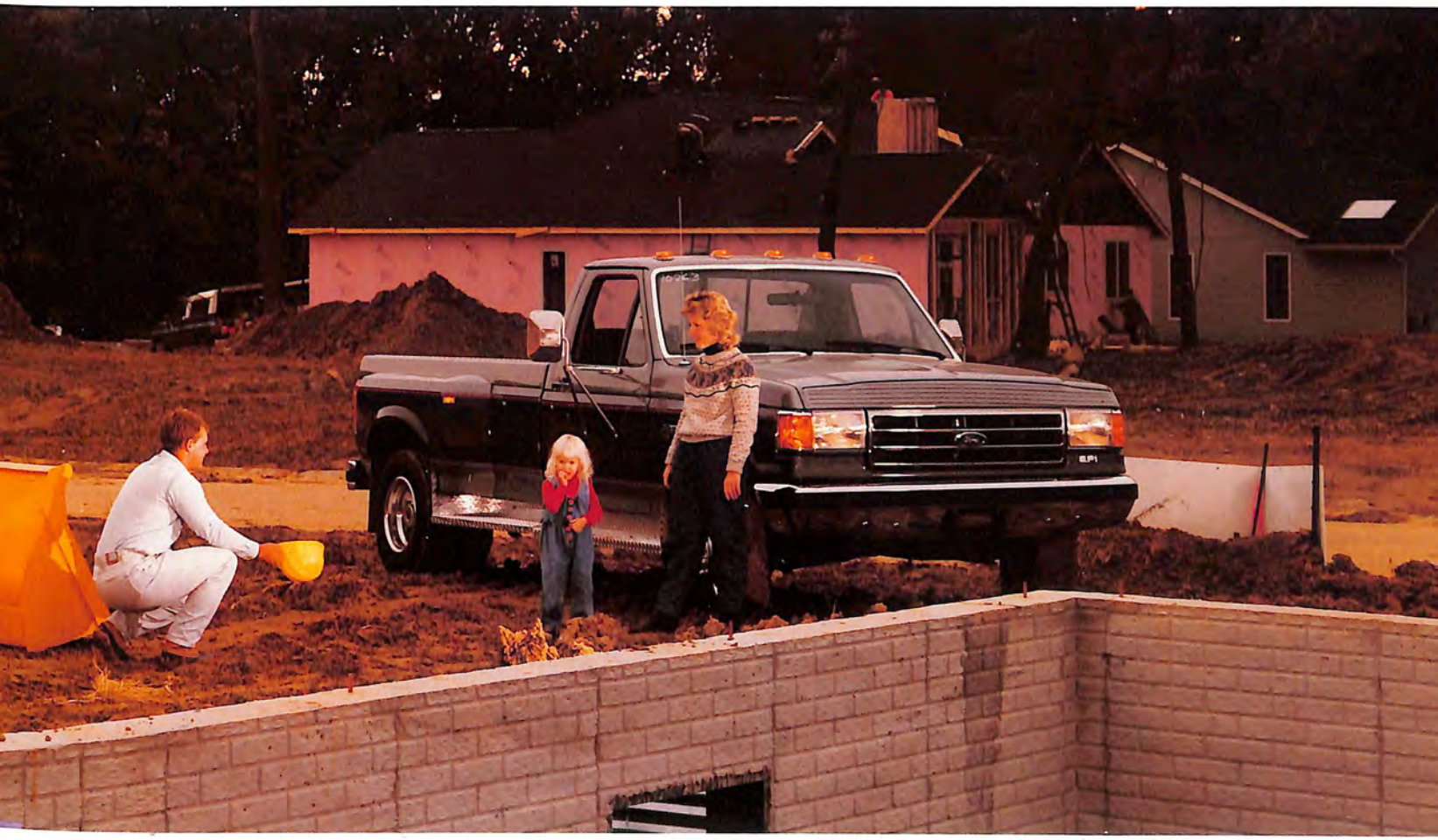
Machine design also influences service work that is required due to failures. Here, too, John Deere engineers have done their job. Every 310D Backhoe is packed full of features that add hours of trouble-free service to the life of every machine.

Hydraulic lines and cylinders, for example, are shielded to reduce damage during operation. Lines run within machine components where possible to provide protection. In other vulnerable areas they're covered by Cordura fabric, the same material used to make bullet-proof jackets, to provide needed protection.

A unique swing cylinder design automatically cushions backhoe swing by cutting oil flow in half near the swing limit. This eliminates the service problems associated with mechanical swing retard mechanisms.

No-clutch direction reversing, even at full engine rpm, eliminates wear and tear on clutches and other internal parts that can cause service problems.

John Deere engineers understand the important role good maintenance plays in keeping any machine up and running. They also understand there are a lot of other just as important demands on an operator's time. That's why they've done so much to make the 310D Backhoe Loader quick and easy to service.



The ignition key locks access doors for excellent vandal protection.

Check reverser and hydraulic system levels through this door.

Just remove two bolts for easy access to batteries, loader control valve.

Flat-face O-ring seal couplings virtually eliminate oil leaks.

Each electrical circuit has its own fuse in this central fuse block.

Daily engine service access is through a large door at the front of the hood.

CAPACITIES

Fuel tank	28 U.S. gal. (106 L)
Engine coolant	17 qt. (16 L)
Engine oil including filter	9 qt. (8.5 L)
Torque converter and reverser system	8 qt. (7 L)
Hydraulic system	21 U.S. gal. (79 L)
Transaxle with MFWD	6 U.S. gal. (23 L)

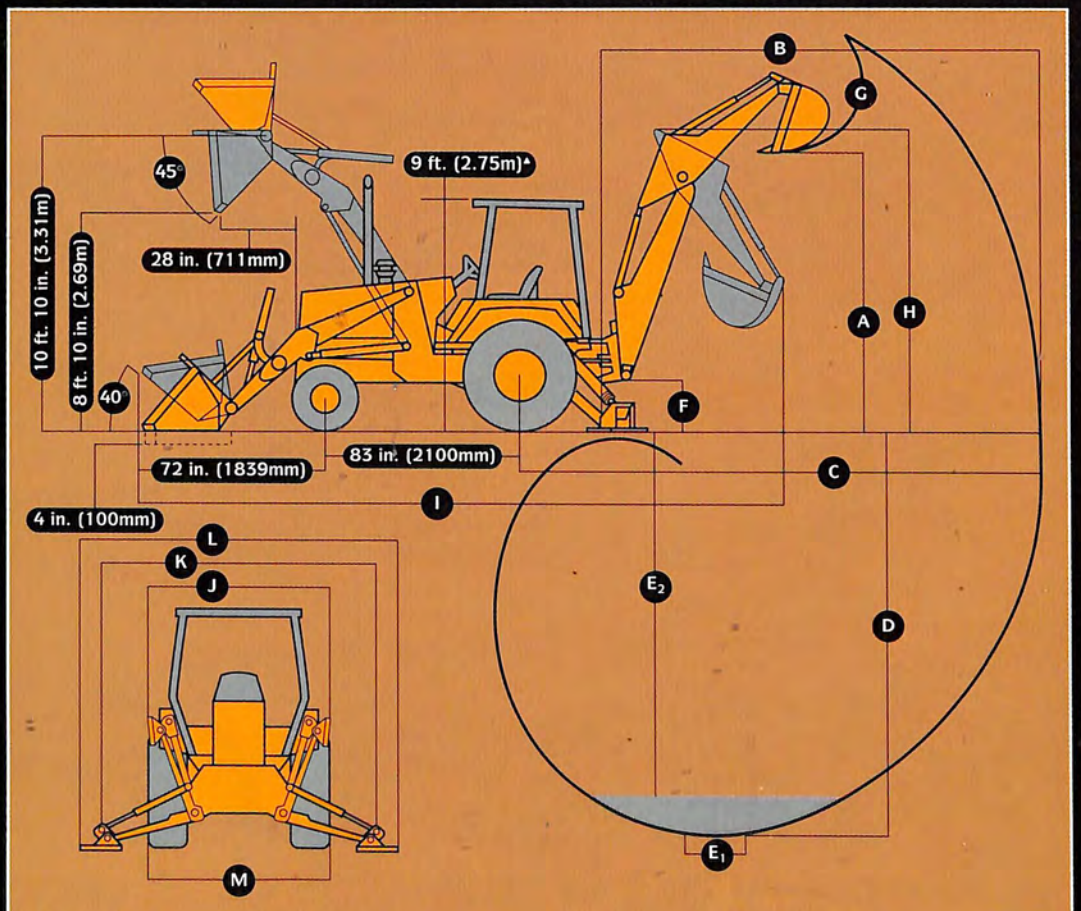
OPERATING WEIGHTS

310D	13,600 lb. (6169 kg)
cab adds	500 lb. (227 kg)
mechanical-front-wheel drive with tires adds	220 lb. (100 kg)
extendable dipperstick excluding required counterweight adds	430 lb. (195 kg)
optional front counterweight	370 lb. (169 kg)*
optional front counterweight	770 lb. (349 kg)*
backhoe bucket coupler adds	200 lb. (91 kg)

See backhoe and loader performance data for bucket weights

*Denotes 30 lb. (14 kg) weight reduction when front bumper is removed

DIMENSIONS



▲ ROPS and cab

Key:	Backhoe*	Extendable dipperstick Retracted	Extendable dipperstick Extended
A. Loading height, truck loading position	11 ft. 4 in. (3.45 m)	11 ft. 8 in. (3.55 m)	13 ft. 11 in. (4.24 m)
B. Reach from center of swing mast	17 ft. 7 in. (5.36 m)	17 ft. 7 in. (5.36 m)	21 ft. 3 in. (6.47 m)
C. Reach from center of rear axle	21 ft. (6.40 m)	21 ft. (6.40 m)	24 ft. 7 in. (7.50 m)
D. Maximum digging depth	14 ft. 6 in. (4.42 m)	14 ft. 6 in. (4.42 m)	18 ft. 3 in. (5.56 m)
E. Digging depth SAE:			
(1) 2-ft. (610 mm) flat bottom	14 ft. 4 in. (4.37 m)	14 ft. 4 in. (4.37 m)	18 ft. 2 in. (5.53 m)
(2) 8-ft. (2440 mm) flat bottom	13 ft. 2 in. (4.02 m)	13 ft. 2 in. (4.02 m)	17 ft. 4 in. (5.28 m)
F. Ground clearance, minimum	13 in. (330 mm)	13 in. (330 mm)	13 in. (330 mm)
G. Bucket rotation	160 or 180 degrees	160 or 180 degrees	160 or 180 degrees
H. Transport height	12 ft. (3.67 m)	12 ft. 2 in. (3.72 m)	12 ft. 2 in. (3.72 m)
I. Overall length, transport	22 ft. 7 in. (6.88 m)	22 ft. 7 in. (6.88 m)	22 ft. 7 in. (6.88 m)
J. Stabilizer width–transport w/ROPS	7 ft. (2.12 m)	7 ft. (2.12 m)	7 ft. (2.12 m)
K. Stabilizer spread–operating	10 ft. (3.05 m)	10 ft. (3.05 m)	10 ft. (3.05 m)
L. Stabilizer overall width–operating	11 ft. 6 in. (3.50 m)	11 ft. 6 in. (3.50 m)	11 ft. 6 in. (3.50 m)
M. Overall width (less loader bucket)	85 in. (2.15 m)	85 in. (2.15 m)	85 in. (2.15 m)

*See backhoe performance

JDAdvantEDGE

It's a no-cost extra that comes with every 310D. It's a huge package of support programs, parts systems, warranty plans, finance packages and dealer resources dedicated to giving you the best value for your backhoe dollar.

JOHN DEERE

SAFETY live with it

DKA1945 Litho in U S A (91 08)